UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/782,134	02/18/2004	John Santhoff	048CIP-120	5198

44279 7590 04/25/2008

PULSE-LINK, INC.
1969 KELLOGG AVENUE
CARLSBAD, CA 92008

EXAMINER	
QURESHI, AFSAR M	
ART UNIT	PAPER NUMBER
2616	

MAIL DATE	DELIVERY MODE
04/25/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450
www.uspto.gov

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/782,134
Filing Date: February 18, 2004
Appellant(s): SANTHOFF ET AL.

Peter Martinez
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 2/27/2007 appealing from the Office action mailed 8/23/2006.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Non-Final

The appellant's statement of the status of amendments after non-final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

Examiner noted article referenced in Appendix B, "Scientific American and Microwave Journal.

In reference to Applicant's arguments, in this section, Examiner notes that claims (e.g., claims 7, 16 and 17) are broad enough and are fully disclosed by the cited prior art references, Padovani et al.(US 5,535,239) and Fullerton (US 2003/0189975). For Example, Fullerton is concerned about avoiding interference using two different pulse rates applying orthogonal PN (Pseudo Number) coding to each pulse in a direct sequence spectrum system (see SUMMARY and [0084]).

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

The following is a listing of the evidence relied upon in the rejection of claims under appeal:

20030189975	Fullerton	10-2003
5,535,239	Padovani et al.	7-1996

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 7-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fullerton (US 2003/0189975) in view of Padovani et al. (US 5,535,239).

Fullerton discloses a communication system comprising the following features: **regarding claim 7**, an ultra-wideband communication method; regarding claim 16, an ultra wideband communication method;

regarding claim 17, an ultra-wideband communication device. See Abstract.

Fullerton does not disclose the following features: the method comprising the steps of:

regarding claim 7, generating a first data frame, constructed to transmit data at a first data rate; generating a second data frame, constructed to transmit data at a second data rate; and transmitting both the first and second data frames in a pseudo-random method;

regarding claim 8, wherein the pseudo-random method comprises transmitting the first and second data frames so as to substantially avoid generating a spectral line;

regarding claim 9, wherein the pseudo-random method comprises transmitting the first and second data frames by using a pseudo-random timing sequence;

regarding claim 10, wherein the first and second data frames each comprise a plurality of time bins, with each time bin capable of receiving an ultra-wideband pulse;

regarding claim 11, wherein the first data frame transmits data at a rate that ranges between about one kilobit per second to about five megabits per second;

regarding claim 12, wherein the second data frame transmits data at a rate that ranges between about five megabits per second to about one gigabit per second;

regarding claim 13, wherein the second data frame transmits data at a rate selected from a group consisting of: a 25 megabit per second rate, a 50 megabit per second rate, a 100 megabit per second rate, a 200 megabit per second rate, a 400 megabit per second rate, a 480 megabit per second rate, a 500 megabit per second rate, and a one gigabit per second rate;

regarding claim 14, wherein the first and second data frames each comprise a time duration that may range from about one microsecond to about one millisecond;

regarding claim 15, wherein the first and second data frames each comprise a plurality of time bins, with each time bin capable of receiving an ultra-wideband pulse, wherein the ultra wideband pulse may range in duration from about 10 picoseconds to about one nanosecond;

regarding claim 16, the method comprising the steps of: means for generating a first data frame, constructed to transmit data at a first data rate; means for generating a second data frame, constructed to transmit data at a second data rate; and means for transmitting both the first and second data frames in a pseudo-random method;

regarding claim 17, comprising: a transceiver structured to communicate at a first data rate; and a transmitter structured to transmit at a second data rate that is greater than the first data rate;

regarding claim 18, wherein the transceiver communicates by receiving and transmitting at the first data rate, and the transmitter transmits at the second data rate;

regarding claim 19, wherein the first data rate transmits data at a rate that ranges between about 1 kilobit per second to about 5 megabits per second;

regarding claim 20, wherein the second data rate transmits data at a rate that ranges between about 5 megabits per second to about 1 gigabit per second.

Padovani et al. discloses a communication system comprising the following features:

regarding claim 7, generating a first data frame (Figs. 2a-h; Figs. 10a-d), constructed to transmit data at a first data rate (Figs. 10a-d); generating a second data frame (Figs. 2a-h; Figs. 10a-d), constructed to transmit data at a second data rate (Figs. 10a-d); and transmitting both the first and second data frame (Figs. 2a-h; Figs. 10a-d)s in a pseudo-random (Fig. 1, DATA BURST RANDOMIZER LOGIC 46; column 16, lines 50-63; column 34, lines 43-55) method;

regarding claim 8, wherein the pseudo-random (Fig. 1, DATA BURST RANDOMIZER LOGIC 46; column 16, lines 50-63; column 34, lines 43-55) method comprises transmitting the first and second data frame (Figs. 2a-h; Figs. 10a-d)s so as to substantially avoid generating a spectral line;

regarding claim 9, wherein the pseudo-random (Fig. 1, DATA BURST RANDOMIZER LOGIC 46; column 16, lines 50-63; column 34, lines 43-55) method comprises transmitting the first and second data frame (Figs. 2a-h; Figs. 10a-d)s by using a pseudo-random (Fig. 1, DATA BURST RANDOMIZER LOGIC 46; column 16, lines 50-63; column 34, lines 43-55) timing sequence;

regarding claim 10, wherein the first and second data frame (Figs. 2a-h; Figs. 10a-d)s each comprise a plurality of time bins, with each time bin capable of receiving an ultra-wideband pulse (Fig. 12);

regarding claim 15, wherein the first and second data frame (Figs. 2a-h; Figs. 10a-d)s each comprise a plurality of time bins, with each time bin capable of receiving an ultra wideband pulse (Fig. 12);

regarding claim 16, the method comprising the steps of: means for generating a first data frame (Figs. 2a-h; Figs. 10a-d), constructed to transmit data at a first data rate (Figs. 10a-d); means for generating a second data frame (Figs. 2a-h; Figs. 10a-d), constructed to transmit data at a second data rate (Figs. 10a-d); and means for transmitting both the first and second data frame (Figs. 2a-h; Figs. 10a-d)s in a pseudo-random (Fig. 1, DATA BURST RANDOMIZER LOGIC 46; column 16, lines 50-63; column 34, lines 43-55) method;

regarding claim 17, comprising: a transceiver structured to communicate at a first data rate (Figs. 10 a-d); and a transmitter structured to transmit at a second data rate (Figs. 10a-d) that is greater than the first data rate (Figs. 10a-d);

regarding claim 18, wherein the transceiver communicates by receiving and transmitting at the first data rate (Figs. 10a-d), and the transmitter transmits at the second data rate (Figs. 10a-d).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the system of Fullerton by using the features, as taught by Padovani et al, in order to provide an efficient data communication system by reducing within transmission data frames of various users the occurrence of unnecessary instances of contemporaneous transmission of data so as to reduce system wide traffic loading in data transmission. See Padovani et al., column 2, lines 45-48.

regarding claims 11, 12, 13, 14, 15, 19, 20, *Fullerton and Padovani et al. do not disclose* the specific data rate and time duration. However, it would have been obvious

to one of the ordinary skill in the art to implement any bit locations in a burst as a design choice based upon the arrangement specification and requirement for users.

(10) Response to Argument

In response to an Appeal Brief submitted under 35 U.S.C. §134, the Panel decided to maintain the rejection on the grounds discussed in paragraph 9 above. Following is the response to Applicant's argument set forth in section (7) Argument of Appeal Brief.

On pages 5-6, responsive to Applicant's argument, Examiner, respectfully, maintains that the prior art references of Fullerton and Padovani et al. are in the same field of endeavor, for example, Padovani discloses transmitting packets at pseudo-random times within transmission time period and Fullerton teaches pulse modulation with reference to pseudo-random code components, see [0050], [0075]. Both, Padovani and Fullerton are concerned with pseudorandomly positioning data within a data frame for transmission (e.g., Padovani, col. 2, lines 36-39 and Fullerton, fig. 4). Examiner also maintains that the combining or modifying the teachings of the prior art to produce the claimed invention *can also* be found in the knowledge generally available to one of ordinary skill in the art.

Applicant admits, in the arguments, that Padovani teaches pseudorandom positioning in each data frame. One skilled in the art would readily realize that these frames with pseudorandom positioning will be transmitted in pseudorandom method as broadly claimed in claims 7, 16 and 17. Furthermore, Applicant's arguments are more specific than the claimed subject matter and seemingly geared toward sequencing, such as pseudorandom time sequence (claim 9). Again, any frame with pseudorandom

positioning of data (Padovani) is being transmitted using pseudorandom time sequence, which is well known in the art, unless Applicant defines what specific pseudorandom timing sequence is used and how.

On page 7, Applicant argued that Padovani reference fails to teach "a transceiver structured to communicate at a first data rate and a transmitter structured to transmit at a second data rate that is greater than the first data rate". However, Padovani discloses a transceiver 10 and a transmitter within the structure (see figure 1) transmitting different data rates via access channel and primary traffic channel. A transmitter 56 within has frequency upconverters. It would have been obvious to one of ordinary skill in the art that this equipment can be utilized/modified to carry data at a desired rate.

As to arguments in **section B** and **C,** Examiner stated, in the response to arguments, first Office Action, dated 8/3/2006, that Fullerton is concerned with the occurrence of unnecessary instances, such as self interference (see Abstract). Therefore, it would have been beneficial to utilize the finite pseudorandom function in a precise and quantitative way, as taught by Padovani, for both efficient and secured data transfer at assorted rates.

A reasonable expectation of success lies, for example, in reconstructing noise-like signal (of Fullerton) into original data at the receiving end by utilizing a correlation of the *transmitted PN sequence* (of Padovani) resulting in processing gain. In addition, it will also help to calculate the receiver's position if the transmitter's positions are known which is the basis for many satellite navigation systems.

Examiner believes all the arguments, in previous response to Office Actions and currently set forth herewith, are responded to.

For the reasons stated above, it is believed that the rejections should be sustained.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

Respectfully submitted,

Afsar M. Qureshi

/Afsar M. Qureshi/ PE AU 2616

4/19/2008

Conferees:

Wellington Chin

/Wellington Chin/

Quality Assurance Specialst, TC 2600

Lynn Feild

/Feild Lynn/

Supervisory Patent Examiner, Art Unit 2616